

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (currently amended) ~~Electrophoretic system comprising~~ An electrophoretic system, comprising:

a separation system and a detection system,

said separation system comprising a channel (1) and a first separation electrode (2) located at a first end of the channel (1) and a second separation electrode (3) located at a second end of the channel (1),

said separation system being arranged in such a way that a potential difference can be applied between the first and second separation electrodes (2, 3),

said detection system, in use, being positioned close to the channel (1) or inside the channel (1), wherein

~~characterised in that~~

the electrophoretic system comprises means to reduce a voltage difference between the separation system and the detection system in order to prevent electrical breakthrough between the separation system and the detection system, where said means to reduce said voltage difference ~~comprise~~ comprises a DC-voltage source (21).

2. (currently amended) ~~Electrophoretic~~ The  
electrophoretic system according to claim 1, ~~characterised in~~  
~~that~~ wherein at least one potential sensor (20) is provided  
located close to the detection system, which controls the DC-  
voltage source (21).

3. (currently amended) ~~Electrophoretic~~ The  
electrophoretic system according to claim 1,

~~characterised in that~~ wherein the detection system  
comprises one or more electrodes (11, 12, 13, 14) and a first AC-  
voltage source (7) and a conductivity of a liquid is determined  
by measuring parameters obtained from the electrodes (11, 12, 13,  
14).

4. (currently amended) ~~Electrophoretic~~ The  
electrophoretic system according to claim 1, ~~characterised in~~  
~~that~~ wherein the detection system comprises four electrodes (11,  
12, 13, 14) having two outer electrodes (11, 12) and a first AC-  
voltage source (7) connected to the two outer detection  
electrodes (11, 12) and a conductivity of a liquid in said  
channel (1) is determined by measuring parameters obtained from  
the electrodes (11, 12, 13, 14).

5. (currently amended) ~~Electrophoretic~~ The  
electrophoretic system according to claim 3, ~~characterised in~~

~~that~~ wherein the one or more electrodes (11, 12, 13, 14) are in galvanic contact with the liquid.

6. (currently amended) ~~Electrophoretic~~ The  
electrophoretic system according to claim 3, ~~characterised in~~  
~~that~~ wherein a second AC-voltage source (9) is connected to the  
second separation ~~electrode-3~~ electrode (3).

7. (currently amended) ~~Electrophoretic~~ The  
electrophoretic system according to claim 6, ~~characterised in~~  
~~that~~ wherein the second AC-voltage source (9) is controlled by  
the first AC-voltage source (7).

8. (currently amended) ~~Electrophoretic~~ The  
electrophoretic system according to claim 7, ~~characterised in~~  
~~that~~ wherein said first AC-voltage source (7) is connected to  
said second AC-voltage source (9) via an amplifier (8).

9. (currently amended) ~~Electrophoretic~~ The  
electrophoretic system according to claim 8, ~~characterised in~~  
~~that~~ wherein said amplifier (8) has an amplification factor equal  
to or smaller than 1.

10. (currently amended) ~~Electrophoretic~~ The  
electrophoretic system according to claim 4, ~~characterised in~~

~~that~~ wherein the one or more electrodes (11, 12, 13, 14) are in galvanic contact with the liquid.

11. (currently amended) ~~Electrophoretic~~ The  
electrophoretic system according to claim 4, ~~characterised in~~  
~~that~~ wherein a second AC-voltage source (9) is connected to the  
second separation ~~electrode~~ electrode (3).

12. (currently amended) ~~Electrophoretic~~ The  
electrophoretic system according to claim 5, ~~characterised in~~  
~~that~~ wherein a second AC-voltage source (9) is connected to the  
second separation ~~electrode~~ electrode (3).

13. (currently amended) ~~Electrophoretic~~ The  
electrophoretic system according to claim 10, ~~characterised in~~  
~~that~~ wherein a second AC-voltage source (9) is connected to the  
second separation ~~electrode~~ electrode (3).

14. (currently amended) ~~Electrophoretic~~ The  
electrophoretic system according to claim 11, ~~characterised in~~  
~~that~~ wherein the second AC-voltage source (9) is controlled by  
the first AC-voltage source (7).

15. (currently amended) ~~Electrophoretic~~ The  
electrophoretic system according to claim 12, ~~characterised in~~

~~that~~ wherein the second AC-voltage source (9) is controlled by the first AC-voltage source (7).

16. (currently amended) Electrophoretic The  
electrophoretic system according to claim 13, ~~characterised in~~  
~~that~~ wherein the second AC-voltage source (9) is controlled by the first AC-voltage source (7).